TECHNICAL SPECIFICATIONS

WASHINGTON STATE FERRIES

M.V. RHODODENDRON DOCKSIDE REPAIR
CONTRACT NO. 00-6505

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS

WASHINGTON STATE FERRIES

M.V. RHODODENDRON DOCKSIDE REPAIR

CONTRACT NO. 00-6505

TECHNICAL SPECIFICATIONS

For the following Technical Specifications, the Contractor is to provide all labor, material and equipment to accomplish each and every Bid Item unless otherwise specified.

The Specification Item sub-titles in brackets are for WSF internal use only, for Life Cycle Cost modeling. Bidders should ignore such bracketed sub-titles.

1. BERTH VESSEL
{LIFESAVING – RESCUE BOATS}

A. M.V. RHODODENDRON Vessel Particulars:

Length: 227'-6", Beam: 62'-0", Draft: 10'-0", Gross Tons: 937.

B. Provide a berth for the Vessel to accomplish cleaning, painting, inspections, and the work specified herein, and any other necessary repairs.

2. TEMPORARY SERVICE
{LIFESAVING - DAVITS}

A. Furnish and install one (1) telephone on board in a location designated by the Vessel Staff Chief Engineer. The telephone is to have one (1) outside line with toll-free access to Seattle and vicinity and, if different, one (1) line for local numbers. The telephone shall have touch-tone service if available from the Contractor's telephone system.

B. Furnish and maintain electricity, water, safe lighted gangway and trash removal services while vessel is in the Contractor's facility.

C. Provide safety and security for the entire Vessel throughout the construction, repair or preservation period until such time as the WSF has accepted re-delivery of the Vessel. Every reasonable precaution shall be taken to protect the Vessel from the hazards of fire, flooding, pilferage, malicious damage, and other events including cataclysmic phenomena of nature.

D. Provide and maintain comprehensive and effective fire prevention, fire detection, fire fighting programs, and systems sufficient to ensure the safety and integrity of the Vessel. Provide personnel trained in shipboard fire fighting techniques and also trained to cooperate with and assist local fire fighting organizations. Provide sufficient shore fire hoses to ensure an adequate supply of fire fighting water, at sufficient pressure, and maintain an adequate number of tested fire-hoses aboard the Vessel to effectively fight fires at any location in the Vessel.

E. Furnish and maintain portable fire extinguishers in sufficient quantity, and of the appropriate type, to combat local fires of any class. Provide sufficient fire watches, including roving watches as may be required, to ensure that fires that may be inadvertently started by welding sparks or heat, electrical malfunction, or spontaneous combustion are detected, reported and promptly extinguished.

PAINTING OF VESSEL AND HULL PRESERVATION

Special Note

(ATTACHMENT NO. 1)

Area Preparation, Surface Preparation, Grit Blasting, Paint Coatings, and Inspection for Vessel's hull, curtain plates, casing and super structure shall be in accordance with Washington State Ferries' Marine Coating Specification 1/02 unless otherwise specified in the following specifications.

3. EXISTING LIFESAVING EQUIPMENT REMOVAL
{LIFESAVING - DAVITS}

A. Remove the existing Life Raft cradle foundations, and all hardware from vessel as scrap. Repair damaged coating system in accordance with **Attachment No. 1,** titled Washington State Ferries Marine Coating Specification and Color Scheme Rev. No. 1/02.

B. Clean and gas free all spaces associated with the Work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK." Maintain the certificate during the course of the Work.

C. Prepare all areas of damaged paint affected by this item, in accordance with **Attachment No. 1,** to SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of AMERON 235 series epoxy, to a minimum of 6 mils DFT. Topcoat with AMERON Devran 229 Series at a minimum of 2 mils DFT of proper color.

D. Apply AMERON Dev-grip 237M, Haze Gray, to new or disturbed deck areas requiring application of non-skid.

4. RESCUE BOATS, DAVITS AND CRADLES REMOVALS AND NEW INSTALLATION

{LIFESAVING - DAVITS}

NOTE:

The Contractor is cautioned, that there may be some existing poured transits located throughout the existing wire ways on this Vessel. Any existing cables that require removal from these poured transits shall not be disturbed in the transit. Cut the cable at the first hanger, on both sides, from the transit. Leave a stub of sufficient length at the hanger for installation of a heat-shrinkable end cap. Paint the end cap Red. If new transits are required to complete the installation, they shall be Nelson MCT'S.

A. Remove existing two (2) Rescue Boats, Cradles for each boat and Davits; and install WSF furnished, two (2) New Rescue Boats and Davits in accordance with; **Attachment No. 2**, WSF Dwg. No. 8601W-505-016-02 Rev., Dated 1/13/03 titled, Rescue Boat Stations Location and Installation Details; **Attachment No. 3**, WSF Dwg. No. 8000W-524-16-02, Rev. C, Dated 1/16/02 titled Fleetwide Zodiac Rescue Boat Cradle Installation Arrangement & Details; **Attachment No. 4**, Welin Lambie Manual titled, Installation, Operation and Maintenance Manual for Rescue Boat Davit; **Attachment No. 5,** WSF Dwg. No. 8601W-505-090-2 Rev. A, Dated 12/04/01 titled Rescue Boat Electrical Modifications, and **Attachment No. 1,** titled Washington State Ferries Marine Coating Specification and Color Scheme, Rev. No. 1/02.

B. Clean and gas free all spaces associated with the work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK". Maintain the certificate during the course of the Work.

C. Disconnect and remove existing Rescue Boats, Davits, Boat Gripes, Cradles and Boat Motors. Davits and Cradles are to be scrapped out by Contractor. Transport the removed Boats, Motors, and Gripes to WSF facility at Eagle Harbor. Construct a shipping cradle or cribbing suitable for safe transportation of removed equipment. Provide the WSF Inspector with three (3) copies of an inventory list of items sent to WSF facility at Eagle Harbor. Provide 24 hours' or more notice of equipment's shipment to WSF facility at Eagle Harbor.

D. Remove interferences, i.e. cable, lights, foundations, cable hangers and stand-offs, bulkhead transits and deck penetrations as required in accordance with **Attachment No. 5**. All Steel surfaces will have a smooth appearance where these items have been removed, (all remaining welds and gouges will be repaired as required to accomplish a smooth appearance).

E. Install new bulkhead transits and deck penetrations (as needed) for New Cable installations. All watertight bulkhead transits and deck penetrations will be tested for water tightness prior to and after cable installation. New penetrations will maintain the watertight and fire ratings of the boundaries penetrated. All testing shall be in the presence of and to the satisfaction of the WSF and USCG Inspectors. Upon satisfactory completion of the required tests, provide the WSF Inspector with three (3) copies of the test results.

F. Install proper fire insulation as required for bulkhead and deck penetrations removed. Do not reuse removed insulation for new installation.

NOTE:

After all davit electrical connections are complete, before any operation of the davit, it is essential that the isolator is switched on and left on for no less than 48 hours to insure the anti-condensation heaters dry out the control panel. Failure to do this can result in damage to davit electrical components. Check control panel for moisture before commencing operation. Once the control panel is dried out, the panel isolator must be left on to power the anti-condensation heaters and accumulator automatic charging system.

G. Install new Rescue Boat Cradles to fit new Rescue Boats in accordance with **Attachments No. 2 and No. 3**. Furnish and install new Boat Gripes, five (5), to fit new Rescue Boats. Boat Gripes shall be constructed of nylon type material with stainless steel fasteners.

H. Davit and Davit Pedestal will be temporarily installed to ensure proper location and position for lifting and slewing the new Rescue Boat prior to the permanent installation.

I. Attachment points must be located to permit slewing of Rescue Boat directly from cradle without lifting. Outboard chocks will be hinged to permit slewing of Rescue Boat directly from cradle without lifting in accordance with **Attachments No. 2 and No. 3**.

J. Perform a weight test on two (2) Rescue Boat Davits to USCG requirements, and to the satisfaction and acceptance of the WSF and USCG Inspectors. Davit has SWL of 2200 lbs., 110% SWL test weight is 2420 lbs. Upon satisfactory completion of the required tests, provide three (3) copies of the test results to the WSF Inspector.

K. Perform the Functional Checks, as called out in section 3 of **Attachment No. 4.** Perform the Function Checks on each Rescue Boat Davit to the satisfaction and acceptance of the WSF and USCG Inspectors. Upon satisfactory completion of the Function Checks provide three (3) copies of the Function Check results to the WSF Inspector.

L. Fabricate and install two (2) Rescue Boat Davit operating instruction signs in accordance with **Attachment No. 4.** Instruction signs shall be photoengraved on anodized aluminum, with black letters. The signs shall be 18 inches high and 24 inches wide. WSF will provide Operating Instructions as a computer file in AutoCad format. Signs will be mounted in locations designated by the WSF Inspector using 316 stainless steel hardware and fasteners.

M. Install two (2) new brake cable eyebolt guides on each Rescue Boat Davit "T" bar, and one (1) new 5/16" shackle / snap hook, (attach shackle / snap hook around brake cable and to the drum guard cage, on each Rescue Boat Davit, so as to guide the cable as near as possible onto the center of the brake cable drum.) Both items are to be 316 stainless steel materials.

N. Install two (2) WSF supplied accumulator charge valve guards, one (1) on each Rescue Boat Davit accumulator, as directed by the WSF Inspector.

O. Fabricate and install two (2) Rescue Boat Battery Charger Cable storage brackets, (one (1) at each Rescue Boat Station) these brackets will be "J" type brackets mounted in locations designated by the WSF Inspector.

P. Install a davit weight test label plate on each davit in accordance with USCG Requirements.

Q. Conduct a satisfactory NDT Test on all new welds, (if Dye Penetrant is used it will be the Water Soluble type and all residue will removed prior to painting). The tests will be to the satisfaction and acceptance of the WSF and USCG Inspectors. Upon satisfactory completion of the NDT test, provide three (3) copies of the results to the WSF Inspector.

R. Prepare all areas of new installation and damaged paint affected by this Item, in accordance with **Attachment No. 1,** to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of AMERON 235 series epoxy, to a minimum of 6 mils DFT. Topcoat with AMERON Devran 229 Series at a minimum of 2 mils DFT of proper color.

S. Prepare all areas of new installation and damaged Galvanized and Stainless Steel painted surfaces affected by this item, in accordance with **Attachment No. 1,** to an SSPC 3, Power Tool Cleaning. Apply International acid etch primer ZTA 528/529 two (2) part primer at .5 mils DFT. Apply International KH 302 at 5 mils DFT and final coat of International ESB at a minimum of 2 mils, DFT, of proper color.

T. Apply AMERON Dev-grip 237M, Haze Gray, to all new or disturbed deck areas requiring application of non-skid.

U. Install a slip on thick Rubber Padding over the metal handles of the outboard cradle release, glue rubber padding in place.

5. RESCUE BOAT VANDALISM BARRIER

{LIFESAVING – RESCUE BOATS}

A. Install new Vandalism Barriers in accordance with **Attachment No. 2**, WSF Dwg. No. 8601W-505-016-2 Rev.- Dated 1/13/03 titled, Rhododendron Rescue Boat Stations Location and Installation Details and **Attachment No. 1,** titled, Washington State Ferries Marine Coating Specification and Color Scheme Rev. No. 1/02.

B. All attaching hardware, screen retaining flat bar, and mounting clips shall be 316 stainless steel. Screen frame piping shall be galvanized.

C. Clean and gas free all spaces associated with the work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK". Maintain the certificate during the course of the Work.

D. Prepare all areas of new installation and damaged paint affected by this Item, in accordance with **Attachment No. 1**, to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of AMERON 235 series epoxy, to a minimum of 6 mils DFT. Topcoat with AMERON Devran 229 Series at a minimum of 2 mils DFT of proper color.

E. Prepare all areas of new installation and damaged Galvanized and Stainless Steel painted surfaces affected by this Item, in accordance with **Attachment No. 1,** to an SSPC 3, Power Tool Cleaning. Apply International acid etch primer ZTA 528/529 two (2) part primer at .5 mils DFT. Apply one (1) coat of KH 302 at a minimum of 5 mils DFT. Topcoat with International ESB, to a minimum of 2 mils, DFT of proper color.

F. Apply AMERON Dev-grip 237M, Haze Gray, to new or disturbed deck areas requiring non-skid.

6. RESCUE BOAT DAVIT POWER SYSTEM MODIFICATIONS AND BATTERY CHARGERS

{LIFESAVING – RESCUE BOATS}

A. Install two (2) new Rescue Boat Davit power systems and Rescue Boat Battery Charging systems in accordance with **Attachment No. 5**, WSF Dwg. No. 8601W-505-090-2 Rev. A, Dated 12/04/01 titled Rescue Boat Electrical Modifications; and **Attachment No. 1,** titled Washington State Ferries Marine Coating Specification and Color Scheme Rev. No. 1/02. Connections to Boat Davits must be flexible and allow for approximately 70° davit radial movement. Existing non-poured bulkhead and deck penetrations may be reused. Existing cable penetrations, which are not to be reused, will be cut off and blanked. New penetrations shall maintain the watertight and fire ratings of the boundaries penetrated.

B. Locate Battery Charger terminal boxes inboard or forward of Rescue Boats so as not to interfere with slewing of Rescue Boats directly from cradle without lifting. The WSF Inspector shall approve proposed terminal box locations.

C. Fabricate and install foundations for Battery Chargers in spaces designated in **Attachment No. 5**. WSF Inspector will designate specific location within the space.

D. Install new electrical breakers and cabling in accordance with **Attachment No. 5**.

E. Use of existing non-poured bulkhead and deck penetrations is permitted if locations do not interfere with operation of davit or slewing of the rescue boat. New penetrations shall maintain the watertight and fire ratings of the boundaries penetrated.

F. Install new Rescue Boat circuit breaker labels. Material and lettering shall be similar to existing emergency switchboard breaker labels.

G. Prepare all areas of new installation and damaged paint affected by this Item, in accordance with **Attachment No. 1,** to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of AMERON 235 series epoxy, to a minimum of 6 mils DFT. Topcoat with AMERON Devran 229 Series at a minimum of 2 mils DFT of proper color.

H. Prepare all areas of new installation and damaged Galvanized and Stainless Steel painted surfaces affected by this Item, in accordance with **Attachment No. 1,** to an SSPC 3, Power Tool Cleaning. Apply International acid etch primer ZTA 528/529 two (2) part primer at .5 mils DFT. Apply one (1) coat of KH 302 at a minimum of 5 mils DFT. Topcoat with International ESB, to a minimum of 2 mils, DFT of proper color.

I. Apply AMERON, Dev-grip 237M, Haze Gray, to new or disturbed deck areas requiring application of non-skid.

7. GENERAL ALARM SYSTEM MODIFICATION
{MAINTENANCE}

A. Install a new General Alarm Contact Maker in E.O.S. in accordance with **Attachment No. 6** WSF Dwg. No. 8601X-569-095-01 Rev.- Dated 03/04/02 titled General Alarm Modification E.O.S. Contact Maker Installation; and **Attachment No. 1,** titled Washington State Ferries Marine Coating Specification and Color Scheme Rev. No. 1/02. The WSF Inspector will designate actual mounting location. Upon completion of installation, the new Contact Maker will be tested to the satisfaction of the WSF and USCG Inspectors. Upon satisfactory completion of test provide the WSF Inspector with three (3) copies of the test results.

B. Prepare all areas of new installation and damaged paint affected by this Item, in accordance with **Attachment No. 1,** to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of AMERON 235 series epoxy, to a minimum of 6 mils DFT. Topcoat with AMERON Devran 229 Series at a minimum of 2 mils DFT of proper color.

8. INSTALL NEW BILGE FLOODING SENSORS
{MAINTENANCE}

A. Install two (2) new level indicators, one (1) in each shaft alley. The level switches shall be GEMS SWITCH LEVEL INDICATOR part number 43982.

B. The intent of this Item is to replace just the existing level indicator switches in both shaft alley bilges with new switches.

C. Upon completion of the level indicators installation, they shall be tested to the satisfaction of the WSF and USCG Inspectors. Upon satisfactory completion of test provide the WSF Inspector with three (3) copies of the test results.

9. SHAFT ALLEY BILGE AND KEEL PRESERVATION
{MAINTENANCE}

A. Thoroughly degrease and clean the Bilge and Keel area adjacent to the shaft seals in each shaft alley, (the first three frames in from the shaft seal bulkheads, up the hull and bulkheads to deck plate level).

B. Prepare and preserve the specified areas of this Item, in accordance with **Attachment No. 1,** to an SSPC-SP3, Power Tool Cleaning. Apply two (2) coats of AMERON 235 series epoxy, to a minimum of 6 mils each, DFT.

10. I.B.A. AREA FENCING REMOVAL AND REINSTALLATION
{MAINTENANCE}

A. Remove the existing fencing around the old I.B.A. stations, modify, and reinstall the removed fencing along the deck edge in line with the existing deck edge fencing. Remove and reinstall any interference associated with this Item.

B. Clean and gas free all spaces associated with the Work, as necessary, and obtain a Marine Chemist certificate for "SAFE FOR WORKERS", and "SAFE FOR HOT WORK". Maintain the certificate during the course of the Work.

C. Prepare all areas of new installation and damaged paint affected by this Item, in accordance with **Attachment No. 1,** to an SSPC-SP3, Power Tool Cleaning. Apply one (1) coat of AMERON 235 series epoxy, to a minimum of 6 mils DFT. Topcoat with AMERON Devran 229 Series at a minimum of 2 mils DFT of proper color.

D. Prepare all areas of new installation and damaged Galvanize and Stainless Steel painted surfaces affected by this Item, in accordance with **Attachment No. 1,** to an SSPC 3, Power Tool Cleaning and SSPC 1, Solvent Cleaning. Apply International acid etch primer ZTA 528/529 two (2) part primer at .5 mils DFT. Apply one (1) coat of KH 302 at a minimum of 5 mils DFT. Topcoat with International ESB, to a minimum of 2 mils, DFT of proper color.

E. Apply AMERON, Dev-grip 237M, Haze Gray, to new or disturbed deck areas requiring application of non-skid.

11. MOORING CLEAT REPAIR

{MAINTENANCE}

A. Open voids as required to perform weld repairs to the mooring cleats.

B. Clean and gas free the voids associated with the work, as necessary, and obtain a Marine Chemist certification for "SAFE FOR WORKERS" and "SAFE FOR HOT WORK." Maintain the certificate during the course of the work.

C. Clean and prepare the existing welds around the base of the two (2) 48 inch cleats on the Starboard side, one (1) at Frame 43 No. 1 End and one (1) at Frame 53 No. 2 End. Add weld material to the existing weld until a 5/16" fillet weld is accomplished.

D. Clean and prepare the existing welds around the base of the one (1) 30" inch cleat on the Starboard side at Frame 58 No. 1 End. Add weld material to the existing weld until a 5/16" fillet weld is accomplished.

E. Upon completion of the weld repairs, perform an NDT Test of the repaired welds, (MAG PARTICAL). The test will be to the satisfaction of the WSF and USCG Inspectors. Provide the WSF Inspector with three (3) copies of the test report.

(END)